INDEX TO AUTHORS

ABRAMSON, HAROLD A. Electrokinetic phenomena. III. The "isoelectric point" of normal and sensitized mammalian erythrocytes, 163

— and GROSSMAN, E. B. Electrokinetic phenomena. IV. A comparison of electrophoretic and streaming potentials, 563

— and —. A method for the rapid dialysis of large volumes of protein solutions, 487

ALLISON, J. B. See COLE and ALLISON, 71

ANSON, M. L., and MIRSKY, A. E. Protein coagulation and its reversal. Globin, 605

— and —. Protein coagulation and its reversal. The identity of normal hemoglobin with the hemoglobin prepared by the reversal of coagulation, as determined by solubility tests, 597

— and —. Protein coagulation and its reversal. Serum albumin, 725

— and —. The reactions of cyanide with globin hemochromogen, 43

BAAS-BECKING, L. G. M. Salt effects on swarmers of *Dunaliella viridis* Teod., 765

—. See BOONE and BAAS-BECKING, 753

BAILEY, I. W., and ZIRKLE, CONWAY. The cambium and its derivative tissues. VI. The effects of hydrogen ion concentration in vital staining, 363

BERNSTEIN, ALAN. See HOWLAND and BERNSTEIN, 339

BLINKS, L. R. The variation of electrical resistance with applied potential. II. Thin collodion films, 127

—. III. Impaled *Valonia ventricosa*, 139

BOONE, ELEANOR, and BAAS-BECKING, L. G. M. Salt effects on eggs and nauplii of *Artemia salina* L., 753

BRONFENBRENNER, J. See HETLER and BRONFENBRENNER, 547

CASTLE, E. S. The phototropic sensitivity of *Phycomyces* as related to wave-length, 701

COLE, WILLIAM H., and ALLISON, J. B. Chemical stimulation by alcohols in the barnacle, the frog, and *Planaria*, 71

COOK, S. F. The effect of low pressures on cell oxidation, 55

COOPER, WM. C., JR., and OSTERHOUT, W. J. V. The accumulation of electrolytes. I. The entrance of ammonia into *Valonia macrophysa*, 117

COULTER, CALVIN B., and STONE, FLORENCE M. The occurrence of porphyrins in cultures of *C. diphtheriae*, 583

CROZIER, W. J., and NAVEZ, A. E. Temperature characteristic for production of CO_2 by *Phaseolus* seedlings, 617

GATES, FREDERICK L. A study of the bactericidal action of ultra-violet light. III. The absorption of ultra-violet light by bacteria, 31

GOWEN, JOHN W. Metabolism as related to chromosome structure and the duration of life, 463

—. On chromosome balance as a factor in duration of life, 447

GREENSTEIN, JESSE P. See MITCHELL and GREENSTEIN, 255

GROLLMAN, ARTHUR. The vapor pressures of aqueous solutions with special reference to the problem of the state of water in biological fluids, 661

GROSSMAN, E. B. See ABRAMSON and GROSSMAN, 487, 563

HALPERN, L. Distribution of hydrochloric acid in gelatin gels, 575

HARTLINE, H. KEFFER. See LUCKÉ, HARTLINE, and MCCUTCHEON, 405

—. See MCCUTCHEON, LUCKÉ, and HARTLINE, 393

HARVEY, E. NEWTON, and SNELL, PETER A. The analysis of bio-luminescences of short duration, recorded with photoelectric cell and string galvanometer, 529

HARVEY, E. NEWTON. See LOOMIS, HARVEY, and MACRAE, 105

HETLER, D. M., and BRONFENBRENNER, J. Detachment of bacteriophage from its carrier particles, 547

HILL, S. E. See OSTERHOUT and HILL, 385, 473, 611

HITCHCOCK, DAVID I. The combination of edestin with hydrochloric acid, 99

—. The isoelectric point of a standard gelatin preparation, 685

HOWLAND, RUTH B., and BERNSTEIN, ALAN. A method for determining the oxygen consumption of a single cell, 339

IRWIN, MARIAN. Studies on penetration of dyes with glass electrode. IV. Penetration of brilliant cresyl blue into *Nitella flexilis*, 1

—. V. Why does azure B penetrate more readily than methylene blue or crystal violet? 19

JACQUES, A. G., and OSTERHOUT, W. J. V. The accumulation of electrolytes. III. Behavior of sodium, potassium, and ammonium in *Valonia*, 301

KRUEGER, ALBERT P. The sorption of bacteriophage by living and dead susceptible bacteria. I. Equilibrium conditions, 493

KRUEGER, ALBERT P., and NORTHROP, JOHN H. The kinetics of the bacterium-bacteriophage reaction, 223

LILLIE, RALPH S. The conditions of recovery of transmissivity of newly repassivated iron wires in nitric acid, 349

LOOMIS, ALFRED L., HARVEY, E. NEWTON, and MACRAE, C. The intrinsic rhythm of the turtle's heart studied with a new type of chronograph, together with the effects of some drugs and hormones, 105

LUCKÉ, BALDUIN, HARTLINE, H. KEFFER, and MCCUTCHEON, MORTON. Further studies on the kinetics of osmosis in living cells, 405

—. See MCCUTCHEON, LUCKÉ, and HARTLINE, 393

MACRAE, C. See LOOMIS, HARVEY, and MACRAE, 105

MCCUTCHEON, MORTON, LUCKÉ, BALDUIN, and HARTLINE, H. KEFFER. The osmotic properties of living cells (eggs of *Arbacia punctulata*), 393

—. See LUCKÉ, HARTLINE, and MCCUTCHEON, 405

MIRSKY, A. E. See ANSON and MIRSKY, 43, 597, 605, 725

MITCHELL, PHILIP H., and GREENSTEIN, JESSE P. Electrometric determinations of the dissociation of glycocoll and simple peptides, 255

MUDD, EMILY B. H. See MUDD and MUDD, 733

MUDD, STUART, and MUDD, EMILY B. H. The deformability and the wetting properties of leucocytes and erythrocytes, 733

MURRAY, CECIL D. The physiological principle of minimum work. A reply, 445

NAVEZ, A. E. See CROZIER and NAVEZ, 617

NORTHROP, JOHN H. Crystalline pepsin. III. Preparation of active crystalline pepsin from inactive denatured pepsin, 713

—. See KRUEGER and NORTHROP, 223

OSTERHOUT, W. J. V. The accumulation of electrolytes. II. Suggestions as to the nature of accumulation in *Valonia*, 285

—. The kinetics of penetration. III. Equations for the exchange of ions, 277

— and HILL, S. E. The death wave in *Nitella*. III. Transmission, 385

— and —. Electrical variations due to mechanical transmission of stimuli, 473

— and —. The production and inhibition of action currents by alcohol, 611

—. See COOPER and OSTERHOUT, 117

—. See JACQUES and OSTERHOUT, 301

PINCUS, GREGORY. On the temperature characteristics for frequency of breathing movements in inbred strains of mice and in their hybrid offspring. I, 421

RAHN, OTTO. The order of death of organisms larger than bacteria, 315

RASHEVSKY, N. On the theory of nervous conduction, 517

SIMMS, HENRY S. The arginine and prearginine groups in edestin, 87

SNELL, PETER A. See HARVEY and SNELL, 529

STONE, FLORENCE M. See COULTER and STONE, 583

STRAUP, DANELLA. The flocculation of gelatin at the isoelectric point, 643

TANG, PEI-SUNG. Temperature characteristics for the oxygen consumption of germinating seeds of *Lupinus albus* and *Zea mays*, 631

THIMANN, KENNETH V. The effect of salts on the ionization of gelatin, 215

WRIGHT, G. PAYLING. Factors influencing the respiration of erythrocytes. I. Primitive avian erythrocytes, 179

—. II. Mammalian reticulocytes, 201

ZIRKLE, CONWAY. See BAILEY and ZIRKLE, 363

INDEX TO SUBJECTS

ACID, hydrochloric, combination of edestin with, 99

—, —, distribution in gelatin gels, 575

—, nitric, conditions of recovery of transmissivity of newly repassivated iron wires in, 349

Albumin, serum, coagulation and reversal, 725

Alcohol, production and inhibition of action currents by, 611

Alcohols, chemical stimulation, in barnacle, 71

—, — —, — frog, 71

—, — —, — *Planaria*, 71

Ammonia, entrance into *Valonia macrophysa*, 117

Ammonium, behavior in *Valonia*, 301

Arbacia punctulata, eggs, osmotic properties, 393

Arginine and prearginine groups in edestin, 87

Artemia salina L., eggs, salt effects, 753

— — —, nauplii, salt effects, 753

Azure B, penetration, comparison with crystal violet, studied with glass electrode, 19

— —, —, — with methylene blue, studied with glass electrode, 19

BACTERIA, absorption of ultra-violet light, 31

—, dead susceptible, sorption of bacteriophage by, equilibrium conditions, 493

—, living susceptible, sorption of bacteriophage by, equilibrium conditions, 493

—, organisms larger than, order of death, 315

Bactericidal action of ultra-violet light, 31

Bacteriophage-bacterium reaction, kinetics, 223

Bacteriophage, detachment from carrier particles, 547

—, sorption by dead susceptible bacteria, equilibrium conditions, 493

—, — — living susceptible bacteria, equilibrium conditions, 493

Bacterium-bacteriophage reaction, kinetics, 223

Barnacle, chemical stimulation by alcohols, 71

Biological fluids, vapor pressures of aqueous solutions with special reference to state of water in, 661

Bioluminescences of short duration, analysis, recorded with photoelectric cell and string galvanometer, 529

Bird, factors influencing the respiration of primitive avian erythrocytes, 179

CAMBIUM and derivative tissues, 363
Carbon dioxide production by *Phaseolus* seedlings, temperature characteristic, 617
Cell oxidation, effect of low pressures, 55
—, photoelectric, and string galvanometer, recording analysis of bioluminescences of short duration, 529
—, single, oxygen consumption, method for determining, 339
Cells, living, eggs of *Arbacia punctulata*, osmotic properties, 393
—, —, kinetics of osmosis, 405
Chemical stimulation by alcohols in barnacle, 71
— — — — in frog, 71
— — — — in *Planaria*, 71
Chromosome balance as factor in duration of life, 447
— structure and duration of life, relation of metabolism, 463
Chronograph, new type, used to study intrinsic rhythm of turtle's heart, 105
Coagulation, protein, and its reversal, 597, 605, 725
—, reversal, hemoglobin prepared by, identity with normal hemoglobin, determined by solubility tests, 597
Collodion films, thin, variation of electrical resistance with applied potential, 127
Corynebacterium diphtheriae cultures, occurrence of porphyrins, 583
Cresyl blue, brilliant, penetration into *Nitella flexilis*, 1
Crystal violet, penetration, comparison with azure B, studied with glass electrode, 19
Cultures of *Corynebacterium diphtheriae*, occurrence of porphyrins, 583
Cyanide, reactions with globin hemochromogen, 43

DEATH of organisms larger than bacteria, order, 315
— wave in *Nitella*, transmission, 385
Dialysis, rapid, of large volumes of protein solutions, method, 487
Dunaliella viridis Teod., swarmers, salt effects, 765
Dyes, penetration, studied with glass electrode, 1, 19

EDESTIN, arginine group, 87
—, combination with hydrochloric acid, 99
—, prearginine group, 87
Eggs of *Arbacia punctulata*, osmotic properties, 393
— — *Artemia salina* L., salt effects, 753
Electrical resistance, variation with applied potential, in impaled *Valonia ventricosa*, 139
— —, — — applied potential, in thin collodion films, 127
Electricity, production and inhibition of action currents by alcohol, 611
—, transmission of death wave in *Nitella*, 385
—, variations due to mechanical transmission of stimuli, 473

Electrode, glass, penetration of dyes studied with, 1, 19
Electrokinetic phenomena, 163, 563
Electrolytes, accumulation, 117, 285, 301
Electrometric determinations of dissociation of glycocoll and simple peptides, 255
Electrophoretic and streaming potentials, comparison, 563
Erythrocytes, deformability and wetting properties, 733
—, normal mammalian, isoelectric point, 163
—, primitive avian, factors influencing respiration, 179
—, respiration, factors influencing, 179, 201
—, sensitized mammalian, isoelectric point, 163

FLOCCULATION, gelatin, at isoelectric point, 643
Frog, chemical stimulation by alcohols, 71

GALVANOMETER, string, and photoelectric cell, recording analysis of bioluminescences of short duration, 529
Gelatin flocculation at isoelectric point, 643
— gels, hydrochloric acid distribution, 575
—, ionization, effect of salts, 215
— preparation, standard, isoelectric point, 685
Gels, gelatin, hydrochloric acid distribution, 575
Germinating seeds of *Lupinus albus*, oxygen consumption, temperature characteristic, 631
— — — *Zea mays*, oxygen consumption, temperature characteristic, 631
Glass electrode, penetration of dyes studied with, 1, 19
Globin, coagulation and its reversal, 605
— hemochromogen, reactions of cyanide, 43
Glycocoll and simple peptides, dissociation, electrometric determinations, 255

HEART, turtle, intrinsic rhythm, effect of drugs and hormones, 105
—, —, — —, studied with new type chronograph, 105
Hemochromogen, globin, reactions of cyanide, 43
Hemoglobin, normal, identity with hemoglobin prepared by reversal of coagulation, determined by solubility tests, 597
—, prepared by reversal of coagulation, identity with normal hemoglobin, as determined by solubility tests, 597
Hormones, effects on intrinsic rhythm of turtle's heart, studied with new type of chronograph, 105
Hydrochloric acid, combination of edestin with, 99
— —, distribution in gelatin gels, 575

Hydrogen ion concentration, effects in vital staining of cambium, 363

ION, hydrogen, concentration, effects in vital staining of cambium, 363
Ionization, gelatin, effect of salts, 215
Ions, equations for exchange, 277
Iron wires, newly repassivated, conditions of recovery of transmissivity in nitric acid, 349
Isoelectric point, flocculation of gelatin, 643
— — of normal mammalian erythrocytes, 163
— — — sensitized mammalian erythrocytes, 163
— — — standard gelatin preparation, 685

KINETICS of bacterium-bacteriophage reaction, 223
— — osmosis in living cells, 405
— — penetration, 277

LEUCOCYTES, deformability and wetting properties, 733
Light, ultra-violet, absorption by bacteria, 31
—, —, bactericidal action, 31
Lupinus albus, germinating seeds, temperature characteristic for oxygen consumption, 631

MAMMALIAN erythrocytes, normal, isoelectric point, 163
Mammalian erythrocytes, sensitized, isoelectric point, 163
— reticulocytes, factors influencing respiration, 201
Metabolism as related to chromosome structure and duration of life, 463
Methylene blue, penetration, comparison with azure B, studied with glass electrode, 19

NAUPLII of *Artemia salina* L., salt effects, 753
Nervous conduction, theory, 517
Nitella, death wave, transmission, 385
— *flexilis*, penetration of brilliant cresyl blue into, 1
—, transmission of death wave, 385
Nitric acid, conditions of recovery of transmissivity of newly repassivated iron wires in, 349

OSMOSIS, kinetics in living cells, 405
—, properties of living cells, eggs of *Arbacia punctulata*, 393
Oxidation, cell, effect of low pressures, 55
Oxygen consumption of germinating seeds of *Lupinus albus*, temperature characteristic, 631
— — — — seeds of *Zea mays*, temperature characteristic, 631
— — — single cell, method for determining, 933

PENETRATION, kinetics, 277

Penetration of brilliant cresyl blue into *Nitella flexilis*, 1
— — dyes studied with glass electrode, 1, 19
Pepsin, crystalline, 713
—, —, active, preparation from inactive denatured pepsin, 713
—, denatured, inactive, preparation of active crystalline pepsin from, 713
Peptides, simple, and glycocoll, dissociation, electrometric determinations, 255
Phaseolus seedlings, carbon dioxide production, temperature characteristic, 617
Photoelectric cell and string galvanometer recording analysis of bioluminescences of short duration, 529
Phototropic sensitivity of *Phycomyces* as related to wave-length, 701
Phycomyces, phototropic sensitivity as related to wave-length, 701
Physiology, principle of minimum work, 445
Planaria, chemical stimulation by alcohols, 71
Porphyrins, occurrence in cultures of *Corynebacterium diphtheriae*, 583
Potassium, behavior in *Valonia*, 301
Potential, applied, variation of electrical resistance in impaled *Valonia ventricosa*, 139
—, —, — — electrical resistance in thin collodion films, 127
Potentials, electrophoretic, and streaming, comparison, 563
—, streaming, and electrophoretic, comparison, 563
Prearginine and arginine groups in edestin, 87
Protein coagulation and its reversal, 597, 605, 725
— solutions, large volumes, method for rapid dialysis, 487

RESPIRATION of erythrocytes, factors influencing, 179, 201
—, temperature characteristics for frequency of breathing movements in inbred strains of mice and in hybrid offspring, 421
Reticulocytes, mammalian, factors influencing respiration, 201

SALT effect on eggs of *Artemia salina* L., 753
— — — nauplii of *Artemia salina* L., 753
— — — swarmers of *Dunaliella viridis* Teod., 765
Salts, effect on ionization of gelatin, 215
Seedlings, *Phaseolus*, carbon dioxide production, temperature characteristic, 617
Seeds, germinating, of *Lupinus albus*, temperature characteristic for oxygen consumption, 631
—, —, — *Zea mays*, temperature characteristic for oxygen consumption, 631

Sensitivity of *Phycomyces*, phototropic, as related to wave-length, 701
Sensitization, erythrocytes, mammalian, isoelectric point, 163
Serum albumin, coagulation and reversal, 725
Sodium, behavior in *Valonia*, 301
Sorption of bacteriophage by dead susceptible bacteria, equilibrium conditions, 493
— — — — living susceptible bacteria, equilibrium conditions, 493
Stimulation, chemical, in barnacle, by alcohols, 71
—, —, — frog, by alcohols, 71
—, —, — *Planaria*, by alcohols, 71
Stimuli, electrical variations due to mechanical transmission, 473
Swarmers of *Dunaliella viridis* Teod., salt effects, 765

TEMPERATURE characteristic for oxygen consumption of germinating seeds of *Lupinus albus*, 631
— — — — consumption of germinating seeds of *Zea mays*, 631
— — — production of carbon dioxide by *Phaseolus* seedlings, 617
— characteristics for frequency of breathing movements in inbred strains of mice and in hybrid offspring, 421
Tissues, derivative, of cambium, 363
Turtle, heart, intrinsic rhythm, effect of drugs and hormones, 105
—, —, — — studied with new type of chronograph, 105

ULTRA-VIOLET light, absorption by bacteria, 31
— —, bactericidal action, 31

VALONIA, behavior of ammonium in, 301
—, — — potassium in, 301
—, — — sodium in, 301
— *macrophysa*, entrance of ammonia, 117
—, nature of accumulation of electrolytes, 285
— *ventricosa*, impaled, variation of electrical resistance with applied potential, 139
Vapor pressures of aqueous solutions with special reference to state of water in biological fluids, 661
Vital staining of cambium, effects of hydrogen ion concentration, 363

WATER, solutions, vapor pressures, with special reference to state of water in biological fluids, 661
—, state in biological fluids, vapor pressures of aqueous solutions with special reference to, 661
Work, minimum, physiological principle, 445

ZEA *mays*, germinating seeds, temperature characteristic for oxygen consumption, 631